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ABSTRACT

In most of the Western European countries, innovations in the primary schools are introduced by a central authority. After a decision is made to adopt a new curriculum or recommend a particular instructional procedure, inspectors introduce it to the teachers. This research report examines on the one hand the extent to which inspectors and teachers consider the innovations as desirable and realizable and on the other hand how these two groups motivate their personal views on the matter. The desired result was to learn which objectives are considered important by these groups and what importance they attach to different constraints. Respondents to a questionnaire were asked to choose and rank from a list of 12 motives and 18 constraints related to innovations in the primary school. The findings indicate that inspectors pay less attention to all the possible constraints than is required by their task, which consists of motivating the teachers for the innovation. Also, when inspectors point out constraints, the constraints are of a different kind from those considered important by the teachers. In a political-administrative innovation strategy, the authors conclude, inspectors must pay more attention to the adoption and the dissemination of the innovation and less to its implementation. (Author/LD)

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Katholieke
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Report nr 2

ANALYSIS OF THE PERCEPTION OF THE EXTENT TO WHICH INNOVATIONS IN THE PRIMARY SCHOOL ARE DESIRABLE AND REALIZABLE

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februari 1978

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Analysis of the perception of the extent to which innovations in the primary school are desirable and realizable.

An exploratory investigation of the differential perception by inspectors and teachers of the primary school (1).

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in collaboration with C. Pottie

1. Aspects of the problem

In the final chapter of the book, in which he describes the process of implementation of a curriculum for integrated studies, Shipman draws the attention among other things to the fact that by everyone involved in curriculum development the objectives and the content are always considered from his own point of view. "The most alarming aspect of this study was the differing perspectives of those involved. This made evaluation difficult, for success for one party could be failure for another" (Shipman, 1974, p. 176). More and more our attention is called to the problem of the differential perception of the starting-points and objectives of certain innovations. In this connection Milbrey Wallin McLaughlin writes that the policy-makers or those who are charged with the development of a curriculum mostly start from the supposition that the (common) objectives pursued by the "innovators" and the "executors" - in this case the teachers - warrant as it were a good implementation. "Shared and mutually understood objectives are expected to elicit behavior and activities on the part of subordinates that are comparable to and congruent with the intent of the agency issuing the mandate or directive" (Milbrey Wallin McLaughlin, 1976, p. 403). We find an analogous train of thought in W.J. Kritek's proposal for ranking the factors that restrain an implementation of an innovation. When ascertaining the relation between clearly or not clearly stated objectives and the process of implementation he draws our attention to the following facts : "Whether goals are stated clearly and realistically or not, there will inevitably be some conflict over goals ... such disagreement need not be covered and it need not be viewed as something sinister. Any program will involve a number of participants who will have various preferences which must be taken into consideration" (W.J. Kritek, 1976, p. 89).

The differential perception of the fundamental value, of the objectives and of the meaning for the practice of an innovation is considered as a general fact and consequently as a reason for an incomplete implementation or for a realization of the innovation which can differ to a large extent from the original goals.

This is important for most of the Western European countries where innovations are more or less introduced by a central authority. The greater part of innovations are submissive to central decisions; these decisions - such as adopting a new evaluation system or a new curriculum for one or other subject or recommending officially one or other instructional procedure, etc. - are then introduced to the teachers by official change agents, in this case by the inspectors. These change agents use all kinds of means such as conferences, articles in reviews, visits to individual teachers, conversations with school teams, etc.... In this way one can ascertain that in such cases the problem is how these innovations are interpreted and introduced by the change agents (which arguments are used) and consequently also to what extent this interpretation corresponds with the teachers' conception.

However, in the investigation that will be described here, attention is not only devoted to the differential perception of the value of an innovation but also to the differential perception of the factors restraining eventually the innovation. To the best of our knowledge little attention has been given thus far to this aspect.

The method which is used in this investigation consists in examining, in two groups notably teachers and inspectors, the differential perception of the extent to which a few innovations are desired and realizable. As will be explained further on, we examined on the one hand the extent to which inspectors and teachers consider the innovations as desired and realizable and on the other hand how these persons motivate the fact that the innovations are desired and realizable.

In other words it is an examination of the different way in which two groups of persons, concerned with education, perceive a number of facts. We try to point out differences and likenesses between on the one hand teachers and on the other hand inspectors as to the way they perceive data that are considered as relevant for implementing innovations. We compared with each other two groups of persons who play an important part in introducing and implementing innovations : the inspectors as the introducers and disseminators of the innovations and the teachers as finally the ones responsable for their execution. If on certain points a differential perception is ascertained it can lead to consequences for the intervention, e.g. concerning the measures

for the optimalization of the communication between the two groups. This would make it possible to avoid conflicts, confusions and other dissipation of energy (2).

This investigation concerns the differential perception of what is "didactically desired" and "realizable" in a number of innovations (3). We start from the hypothesis that at the moment an innovation is introduced the teachers are less convinced than the inspectors of the fact that it is didactically desired and realizable. The intervention will aim at minimalising this differential perception; in other words : the inspectors who act here as change agents will, in different ways, try to convince the teachers of the fact that the innovation concerned is didactically desired and realizable.

It is noteworthy that knowing and understanding the didactical desirableness of an innovation is not sufficient to proceed to its realization : a very important condition for realizing an innovation is that one can make clear why it is didactically desired.

The question whether an innovation is considered as realizable is also especially relevant when we compare the extent to which it is desired and realizable. Indeed, when for instance an innovation is considered to be much wished for but hardly realizable at the moment, one should examine the factors that restrain the translation of the theory into practice.

Finally we get important information about the fact whether the inspectors and teachers questioned are convinced that the innovations concerned are wished for and realizable and especially how they motivate their personal views on the matter. From this information we can learn which objectives are considered as important by these groups and which importance they attach to the different constraints.

2. Course of the investigation

2.1. Analysis of the problem and operationalization

Before choosing the innovations, locating them in all the didactical tendencies and analysing the factors that influence or constrain their implementation, we examined the most important American literature about innovations, the publications about the desired innovations in the Belgian and Dutch situation and a number of pedagogical reviews. After having sought oral information from twelve inspectors, fifteen teachers and seven head teachers we drew up and inventory of the views and motivations of these groups about the recently proposed innovations. Taking our stand on the experience, gained by the aforesaid contacts and from the above-mentioned literature, we selected six innovations using the following criteria : the innovations had to be known by

everyone and they had to be more or less realizable in the present pedagogical-didactical situation.

The considered innovations are placed on three levels :

a. on the level of the contents :
   - curriculum mother tongue : the importance attached to listening and speaking;
   - curriculum geography : the aspect working exemplarily;

b. on the level of the instructional procedures :
   - working in groups;
   - informal discussion;

c. on the level of the didactical aids :
   - use of achievement tests;
   - audio-visual media such as school-television and school-radio with the papers going with them, as well as the use of slides and recorders.

For the six innovations, the two features, i.e. the extent to which these six innovations are wished for and realizable, were operationalized in twelve motives and twelve constraints (cr. 2.3).

2.2. Instrumentalization and preliminary research

A provisional project questionnaire was put before some 40 people, viz. 30 primary school teachers, 7 members of the inspectorial corps and 3 associates of the Section Didactics and Psychopedagogy of the Louvain University. These people were asked to examine if the instructions and the way of answering were sufficiently clear to the respondents and to offer suggestions for optimalization.

2.3. Results of the preliminary research : construction of the final questionnaire

After the preliminary research the final questionnaire was drawn up. The changes that were brought about had mostly a technical character. As to the contents the number of constraints was raised from twelve to eighteen.

The final questionnaire was composed of three parts. First of all a number of questions were asked to identify the respondent. So we got informations namely about his station in life, his educational past, his interest in education and the school where he was teaching. The second and third part concerned respectively the extent to which each of the six innovations were considered to be wished for and realizable. As to the extent to which the innovations were wished for we asked the respondents to express, for each of the six innovations, by means of a six-point-scale, his opinion about the entent to which they were wished for.

"In my opinion this innovation is absolutely not necessary 1
not necessary 2
necessary 3
plainly necessary 4
certainly necessary 5
most certainly necessary 6"

After that, we asked to motivate the opinion on each innovation separately by pointing out in the following list of twelve motives the three most important ones and by ranking these three motives according to their importance.

List of twelve motives

1. Because here we get the possibility of varying more the ways of presenting and digesting subjects.
2. Because the factual material can be reduced for the benefit of really filling up notions and giving an insight into relations.
3. Because the pupils get more opportunity for real collaboration which improves the atmosphere of the class.
4. Because here a possibility is given to take more into account the individual differences in tempo, interest and talents.
5. Because it enables the pupils to make themselves familiar with a number of basic skills of present interest such as using dictionaries and atlases, interpreting outlines and diagrams, taking minutes and making a synthesis.
6. Because the child is given more opportunity for self-activity in the sense of searching and trying itself and consequently also for more responsibility of its own results.
7. Because more possibilities are offered for a permanent evaluation of the pupils' progress.
8. Because the children get more opportunity for learning to listen to others and to speak to them.
9. Because the children are given more possibilities to learn to adapt themselves to persons and situations, e.g. learning correct manners towards the other pupils and towards the teacher.
10. Because the teacher can better start from things the child goes through and experiences and consequently from the child's interest.

11. Because the pupils get more opportunity for really learning to observe in a comparative way and for exploiting further the principal moments of the perception.

12. Because the pupils are given more possibilities to examine the subject critically, i.e. to consider it in every way to compare it with another point of view and to dare abandon his own point of view when it proves to be not quite correct.

In an analogous way we gave the following six-point-scale to examine the extent to which each of the six innovations were considered as realizable.

"In my opinion this innovation is very difficult to realize 1
difficult to realize 2
realizable 3
plainly quite realizable 4
quite realizable 5
excidingly realizable 6"

At the same time the respondents were asked to point out in the following list of eighteen constraints the three most important ones and to rate them according to their importance.

List of constraints

1. Because the present school is not sufficiently equipped for efficient working with different teaching methods : in other words the material circumstances are not adapted to the needs.

2. Because the time and the hard work, required by an innovation, do not carry any financial compensation.

3. Because the teacher talks too little about his daily work to the teachers of his own school and to colleagues from other schools.

4. Because the head teacher doesn't dispose of enough time and means to stimulate innovation and to help his teachers who have difficulties.

5. Because it is not easy to revise one's own way of working though it is wished for when innovating.

6. Because the innovation is pressed on by central authorities and so the characteristic nature and possibilities of each particular school are not sufficiently taken into account.

7. Because mostly the objectives are formulated in too general or indistinct a way and therefore the expected results of the innovation are not very clear and not directly measurable.

8. Because for certain innovations the teacher doesn't have at his disposal a concrete and detailed text-book that translates the theory into practice.

9. Because the teacher is not convinced of the use and the necessity of the innovation.

10. Because the inspectors do not dispose of enough time and means to stimulate innovation and to help the teachers who have difficulties.

11. Because there is no systematic form of in-service-training.

12. Because the fear of not completing the prescribed curriculum keeps the teacher from adopting the innovation.

13. Because the will of devoting oneself to the innovation is paralyzed by the fact that the function of a teacher is socially little esteemed.

14. Because teachers prefer to ascertain for themselves the results of their classes.

15. Because the parents' ignorance in matters of innovation in education can be a constraint.

16. Because in certain classes the overcrowding is a constraint for the realization of the innovations.

17. Because the teacher is independent in his class and he doesn't tolerate any interference in the balance and authority he has got.

18. Because the aim of many new means that are brought into use is not sufficiently explained.

2.4. Sampling

In the investigation the teachers and headteachers of the catholic primary school of the Province of West-Flanders were considered on the one hand, and on the other the governmental inspectors, the diocesan chief inspectors and the diocesan inspectors of profane subjects in the primary schools of the Dutch sector.

As to the group of teachers and headteachers we used the method of the systematical sampling (M. Albinski, 1967, p. 40). In that way we got from the Service of Statistics and Planning of the National Office of Catholic Education 625 addresses of teachers. These 625 teachers as well as the 117 aforesaid inspectors got a questionnaire and a covering letter. From the teachers we got back 254 filled in questionnaires; 242 of them were fit for use. The inspectors sent back 84 questionnaires all of which were fit for use. This response represents 38,7 % of the teachers questioned and 74,0 % of the inspectors questioned. The representativeness testing of the teachers, with as criteria the sex, the age and the proportion

laypeople - conventuals, indicates that the sample of the 242 teachers is representative of the teachers of the free subsidized catholic schools of the province West-Flanders (4).

On the basis of the identification data we got an image of both the groups. Here are a few details of it.

Nearly half of the teachers questioned were born after 1940. There is a pronounced overbalance of female respondents (64,0%) and of laypeople (82,6%). Half of the respondents have followed in-service-training and a large number of teachers attend regularly pedagogical conferences. Some few teachers never read pedagogical articles. Most of the teachers of the sample are teaching in big schools : 55,7% in a school with at least seven classes.

As to the inspectors questionned it is striking that more than 86,8% were worn before 1929 and that nearly all of them are male (94%) and laypeople (94%). Most of them (88,1%) have got an additional degree besides the degrees of teacher and inspector.

3. Summary of the principal results and conclusions

Within the scope of this article it is not possible to reproduce the complete results. For the sake of clarity we grouped the principal results, as well as the comment and the conclusions, into five paragraphs dealing on the one hand with the extent to which the innovations are desired (3.1) and considered as realizable (3.2) and with the discrepancy between both (3.3) and on the other hand with the reasons why the innovations are didactically desired (3.4) and realizable (3.5).

3.1. Differential perception of the extent to which six innovations are desired by inspectors and teachers.

Table 1 shows that all the six innovations are wished for to a rather great extent by inspectors and teachers. Indeed, computed on a scale on which 1 indicates the smallest and 6 the greatest extent to which the innovations are desired, the lowest mean rating is 4.01 and the highest 5.52.

Table 1. Mean rating of the extent to which six innovations are desired by inspectors ($\bar{X}_I$) and teachers ($\bar{X}_T$)

Innovation	X_I	$\bar{X}_T$	$\bar{X}_I - \bar{X}_T$	t-test (a)
curriculum mother tongue	5.52	4.86	0.66	**
curriculum geography	4.76	4.26	0.50	**
working in groups	4.75	4.01	0.74	**
informal discussion	4.84	4.26	0.58	**
use of achievement tests	4.59	4.67	-0.08	
audio-visual media	4.40	4.72	-0.32	*

(a) In this column ** and * indicate respectively that the difference between the mean rating is significant on the 0.01 level or on the 0.05 level.

We ascertain that four innovations are more desired by inspectors than by teachers, viz. the innovations on the level of the contents (curriculum mother tongue and curriculum geography) and those on the level of the instructional methods (working in groups and informal discussion). The innovation "use of audio-visual media" is more desired by teachers than by inspectors. As to the innovation "use of achievement tests" the difference is not significant.

These results confirm what we premised in the description of the aspects of the problem, to wit that the pedagogical authorities, who play an important part in the introduction of innovations, are more convinced of the didactical desirability of the innovations than teachers. When introducing innovations the inspectors try to pass on this conviction to the teachers.

The abovementioned ascertainments are not surprising. Indeed in Belgium many inspectors participate in curriculum development, all of them have to organize in-service-activities and many of them undertake on their own initiative a number of activities with the teachers.

3.2. Differential perception of the extent to which the six innovations are considered as realizable by inspectors and teachers

As a whole, the six innovations are not considered as very realizable : more than half of the mean ratings are lower than four on the six-point-scale (Table 2).

We ascertain that the inspectors consider two innovations more realizable than the teachers, to wit the new curriculum geography and the informal discussion. The differences in the extent to which they are considered as realizable are

respectively 0.46 and 0.43; they are very significant. The teachers, on the contrary, consider the innovation "use of achievement tests in the classroom" more realizable than the inspectors; the difference amounts to 0.36 and is significant.

Table 2. Mean rating of the extent to which six innovations are considered realizable by inspectors ($\bar{X}_I$) and teachers ($\bar{X}_T$).

Innovation	$\bar{X}_I$	$\bar{X}_T$	$\bar{X}_I - \bar{X}_T$	t-test (a)
curriculum mother tongue	4.05	3.95	0.10	
curriculum geography	3.92	3.46	0.46	**
working in groups	3.40	3.30	0.10	
informal discussion	3.63	3.20	0.43	**
use of actievement tests	4.35	4.71	-0.36	*
audio-visual media	3.65	3.72	-0.07	

(a) In this column ** and * indicate respectively that the difference between the mean rating is significant on the 0.01 level or on the 0.05 level.

For the other innovations (curriculum mother tongue, working in groups and audio-visual media) the differences are not significant.

The teachers consider the innovations on the level of the contents and of the instructional methodes less realizable than the inspectors. This goes with the supposition from which we started in the description of the aspects of the problem, to wit that the teachers are less convinced that innovations are realizable because they are confronted with the concrete difficulties of their realization. The same reasoning holds in the case of the innovation "use of achievement tests" : here it is the inspectors who are confronted with the construction of the instruments.

3.3. Discrepancy between the extent to which the innovations are wished for and considered as realizable

This discrepancy is positive for the inspectors and for the teachers (that means that the mean rating of the extent to which the innovations are wished for is higher than the mean rating of the extent to which they are considered as realizable) and very significant for all the six innovations with the exception of the innovation "use of achievement tests" (Table 3). In other words : for five out of the six innovations the extent to which they are perceived as wished for is higher than the extent to which they are considered as realizable. But we ascertain that for four out of the six innovations (to wit : curriculum mother

tongue, working in groups, informal discussion, use of achievement tests) the discrepancy noticed is greater with the inspectors than with the teachers.

Table 3. Discrepancy between the mean rating of the extent to which six innovations are wished for ($\bar{X}_W$) by the inspectors and teachers and the mean rating of the extent to which they are considered as realizable ($\bar{X}_R$) by them.

Innovations	Inspectors		Teachers	
	Discrepancy ($\bar{X}_W - \bar{X}_R$)	t-test (a)	Discrepancy ($\bar{X}_W - \bar{X}_R$)	t-test (a)
curriculum mother tongue	1.47	**	0.91	**
curriculum geography	0.64	**	0.80	**
working in groups	1.35	**	0.71	**
informal discussion	1.21	**	1.06	**
use of achievement tests	0.24		-0.04	
audio-visual media	0.75	**	1.00	**

(a) In this column ** indicates that the difference between the mean rating is significant on the 0.01 level.

Starting from the fact that when introducing innovations the intervention strategy aims at reducing as much as possible the discrepancy between the extent to which they are wished for and realizable, we may suppose that this discrepancy will change.
Consequently, to be able to ascertain the full significance of the results we need information about the discrepancy between both indexes at other times (e.g. at the beginning) of the implementation process.

3.4. Analysis of the differential perception of the didactical motives for which the six innovations are desired

As aforesaid, the persons questioned had been asked to choose from twelve motives the three for which they consider an innovation valuable. Moreover, the three motives checked had to be ranked in order of importance. On this basis we examined the degree of similarity between the choices of the inspectors and the teachers (in this case : the differential perception) and which motives both groups considered as important. We set about it as follows.

We calculated for each motive how often it was mentioned as first (f_1), second (f_2) or third one (f_3) (5). On the basis of the sum of these frequencies, respectively f_{I_i} and f_{T_i} for inspectors and for teachers, we drafted a ranking of the

twelve motives. For each innovation we qualified two rank orders : one for teachers and one for inspectors. The Spearman's rank-difference correlation method enabled us then to compare these two rank orders. On the basis of this rank-difference correlation we could conclude if there is any correlation or not between the choice of the motives by inspectors and by teachers.

In order to compare to what extent the importance of each motive is perceived differentially on the one hand by inspectors and on the other by teachers, the abovementioned sums of frequencies were relatively expressed with regard to the total number of inspectors and the total number of teachers. The difference between the proportions P_I and P_T was examined by means of a test concerning the difference between two proportions in independent samplings (Guilford, 1965, 185-186). The sampling distribution

$$\frac{P_I - P_T}{\sqrt{\hat{\pi}_I \cdot \hat{\pi}_T \left(\frac{n_I + n_T}{n_I \cdot n_T}\right)}}$$

with $P_I = \frac{\Sigma f_{I_i}}{84}$; $P_T = \frac{\Sigma f_{T_i}}{242}$

$n_I = 84$; $n_T = 242$

$\hat{\pi}_I = \frac{n_I P_I + n_T P_T}{n_I + n_T}$; $\hat{\pi}_T = 1 - \hat{\pi}_I$

approached the normal form. Consequently we would use a z-ratio. How the results look like is illustrated on the basis of the innovation "curriculum geography".

3.4.1. Results of the innovation "curriculum geography"

When, having used the Spearman correlation, we compare the rank-order of the motives of the teachers with the one of the inspectors we find a very significant similarity. The Rho-value we got amounts to 0.95 and is significant at the 0.01 level. In other words : there is a more than fortuitous similarity between both groups when one seeks to rank motives.

According to the importance one attaches to the different motives, we established the following for the innovation "curriculum geography" :

- very frequently chosen motives (when $100.P_I$ and $100.P_T \geqq 30$) (6)

by the inspectors :		by the teachers :	
filling up notions adequately	(89.28%)	filling up notions adequately	(69.00%)
starting from the child's interest	(69.04%)	teaching basic skills	(61.00%)
teaching basic skills	(54.76%)	starting from the child's interest	(47.10%)
observing in a comparative way	(47.61%)	self-activity	(33.88%)

- frequently chosen motives (when $30 > 100.P_I$ and $100.P_T \geq 15$)

by the inspectors :		by the teachers :	
self activity	(17.85%)	observing in a comparative way	(29.75%)

- less frequently chosen motives : in all, eight motives are less frequently chosen by the inspectors and seven by the teachers.

In the choice of motives there is a very great similarity between inspectors and teachers. Both these groups choose the most motives on the cognitive level. However, it appears from the data that the inspectors agree to a greater extent on the importance of a small number of motives.

As to the differential perception of the motivation of the didactical desirableness we ascertain :

- that three motives are significantly rather more chosen by the inspectors : filling up notions adequately, starting from the child's interest and observing in a comparative way (on the 0.01 level);
- that two motives are significantly rather more chosen by the teachers : self-activity (on the 0.01 level) and opportunity for collaboration (on the 0.05 level) though the latter motive does not figure among the frequently chosen motives.

3.4.2. A few ascertainments for the six innovations

All the correlations are significant on the 0.01 level.

The choice of the motives is fairly parallel for both the groups. For the innovations curriculum mother tongue, working in groups and informal discussion mostly motives on the dynamic - emotional level are stated. For the innovation curriculum geography there is a predominance of motives on the cognitive level, whereas the desirableness of the innovation achievement tests seems to be especially connected with the didactical act of the teacher. Only for the innovation audio-visual media is it rather difficult to point out a definite trend.

Moreover, we ascertained that in general the inspectors are more unanimous than the teachers. This appears, on the one hand from the magnitude of the percentages for the motives that are most chosen by both groups : for the six different innovations the percentages of the inspectors are successively 88,09%, 89.28%, 88.09%, 78.57%, 92.85% and 88.09%; for the teachers : 85.53%, 69.00%, 67.35%, 71.07%, 82.64% and 78.51%. On the other hand the fact that with the teachers the percentages of the less chosen motives are

always higher than with the inspectors proves that the latter choose the motives in a more uniform way than the teachers.

These ascertainments enable us to point out the connection with the introduction strategy. We already established that the inspector, as a promoter of educational innovations, is more convinced of the desirableness of the proposed innovations than the teacher. But moreover it appears here that the inspectors motivate the desirableness in a more uniform and more avowed way. Whether this unanimous character can be considered as an absolute criterion for the correctness of the motives remains a debatable point. To our way of thinking, the criterion of the intersubjective similarity is valuable but, certainly, it must not be the only one.

Consequently, the differential perception of the motivation of the didactical desirableness of the six innovations is not to be found in the choice of the motives but in the importance that is attached to the motives concerned.

3.5. Analysis of the differential perception of the influence of constraints on the realisation of the six innovations

The persons questioned had been asked, for each innovation, to choose out of twelve constraints the three most important and to rank them, here too, in order of importance.

3.5.1. Results of the innovation "curriculum geography"

As aforesaid we calculated Spearman's rank-difference correlation on the basis of the rank orders. The rank-difference correlation amounts to 0.7028 and is significant on the 0.01 level.

The importance that is attached to the different constraints is as follows :

- very frequently chosen factors (the same criteria as for the desirableness)

by the inspectors :		by the teachers :	
no concrete text-book	39.28	no concrete text-book	(58.29)
overloaded curricula	35.71	insufficient equipment	(30.16)
intervention by inspector	30.95		

- frequently chosen factors

by the inspectors :		by the teachers :	
formulation of objectives	(28.57)	formulation of objectives	(21.49)
conviction of use and necessity	(28.57)	overloaded curricula	(21.07)
lack of contact with colleagues	(23.80)	centralization	(19.83)
lack of in-service-training	(20.35)	overcrowding	(17.76)
intervention by the head teacher	(19.04)	no financial compensation	(16.52)
change of mentality	(19.04)	lack of in-service-training	(16.51)

- less frequently chosen factors :
  nine by the inspectors and ten by the teachers.

As to the differential perception we ascertain :

- that three factors are significantly more indicated by inspectors than by teachers(significance on the 0.01 level) : overloaded curricula, intervention by inspector, conviction of necessity;
- that three factors are significantly more indicated by teachers than by inspectors (significance on the 0.01 level) : no concrete text-book, insufficient equipment, overcrowding.

3.5.2. A few ascertainments for the six innovations

The Spearman - correlations are not so high as in the results of the investigation of the motives of desirableness, though here too, all of them are significant. That means that the similarity between inspectors and teachers is less avowed when indicating constraints than when indicating motives.

As to the comparison between the relative importance which is attached to each of the constraints about the six innovations, respectively by the teachers and by the inspectors, we refer to table 4. But first we explain succinctly how this table has been composed. The percentages $100.P_I$ and $100.P_T$ indicate the extent to which each constraint for a definite innovation is indicated by respectively inspectors and teachers. So we could make the sum of the percentages for each constraint about the six innovations. In this way we got an idea of the relative importance that, on the whole, is attached by inspectors and teachers to each of the constraints (7).

Table 4. Sums of the percentages with the inspectors (S_I) and teachers (S_T) for each constraint about the six innovations

constraints	S_I	S_T
1. change of mentality	152.36	90.56
2. formulation of objectives	134.49	80.14
3. conviction of use and necessity	211.87	110.29
4. overloaded curricula	138.08	182.62
5. ascertainment of the results	72.61	46.70
6. independency of teacher	65.45	75.17
7. aim of new means not sufficiently explained	90.45	70.23
8. insufficient equipment	138.08	158.23
9. intervention by the head teacher	82.11	86.34
10. intervention by the inspector	116.63	31.78
11. no concrete text-book	107.11	154.10
12. lack of in-service-training	155.93	72.70
13. no financial compensation	44.03	58.23
14. lack of contact with colleagues	58.31	59.56
15. centralization	36.89	61.95
16. socially little esteemed function of the teacher	17.85	27.66
17. parents' ignorance	17.85	60.31
18. overcrowding	119.03	204.10

We call a constraint "very frequent" when S_I or $S_T \geq 180$. When S_I or S_T is situated between 90 and 180 we call the constraint "frequent" and when a percentage is lower than 90 we speak of a "less frequent" constraint. With this criterion we can classify as follows the factors which constrain the realization of the six innovations :

- very frequently chosen factors

  by the inspectors :
  conviction of use and necessity (211.87)

  by the teachers :
  overcrowding (204.10)
  overloaded curricula (182.62)

- frequently chosen factors

  by the inspectors :
  lack of in-service-training (155.93)
  change of mentality (152.36)

  by the teachers :
  insufficient equipment (158.23)
  no concrete text-book (154.10)

insufficient equipment	(138.08)	conviction of use and necessity	(110.29)
overloaded curricula	(138.08)	change of mentality	(99.56)
formulation of objectives	(134.49)		
overcrowding	(119.03)		
intervention by the inspector	(116.63)		
no concrete text-book	(107.11)		
aim of new means	(90.45)		

- less frequently chosen factors : on the whole eight factors were less frequently chosen by the inspectors and twelve by the teachers. We mention for both these groups the three factors to which the least importance is attached :

by inspectors :		by teachers :	
centralization	(36.89)	ascertainment of the results	(46.70)
socially little esteemed function	(17.85)	intervention by the inspector	(31.78)
parents' ignorance	(17.85)	socially little esteemed function	(27.66

As to the differential perception of the constraints for the six innovations it appears that the inspectors stress the change that has to be brought about in the teacher. The teachers, on the contrary, consider as important the constraints that put the responsibility on a authority outside the teacher. Seen from another angle we also can state that the teachers mention the factors that are felt by them in practice as direct constraints. Starting from the "five organizational subsystems" distinguished by Deal and Baldridge we ascertain that the teachers locate the principal constraints in the subsystem "technology", whereas the inspectors place them with the "individual teacher" (Baldridge & Deal, 1975, p. 11). Further on we return to this important difference (cf. point 4 : Discussion).

It is not easy to find a justified criterion to pass judgment on the uniformity with which both inspectors and teachers indicate the constraints, especially because on an average the inspectors indicate more constraints than the teachers. As well as for the examination of the desirableness we take now as standard the size of the percentages of the constraints that both groups have chosen most for the six innovations. For the inspectors these percentages amount respectively to 42.85%, 39.28%, 39.28%, 57.14%, 67.85%, 78.57% and for the teachers 49.17%, 58.26%, 55.37%, 63.22%, 37.60%, 78.09%. Here we don't find between inspectors and teachers the opposition that we have ascertained for the motivation of the desirableness. Both groups are nearly unanimous in pointing out the constraints. This could mean that the inspectors are less faced with the problem of the extent to which innovations are realizable than the extent to which they are wished for. Indeed, the desirableness can be approached on a more exclusive theoretical basis, and as promotors of innovations the inspectors are probably more convinced of the desirableness. We can also ask ourselves whether the inspectors ought not

to be considered as individual innovators who are separately interested in the introduction of particular innovations and who pay less attention to removing constraints for the implementation of innovations.

When examining the results of the investigation about the extent to which innovations are realizable with those of the investigation about the extent to which they are desired we can start from two suppositions. On the one hand the fact that inspectors are more unanimous when indicating motives for the extent to which innovations are desired than when indicating constraints for the extent to which innovations are realizable could mean that the "desired" and "realizable" character must be considered as two clearly distinguished problems. Consequently when preparing an adequate innovation-strategy the problem of the extent to which the innovation is realizable must be distinguished and examined (which are the constraints ?), and that for these reasons the stresses should change (that, for instance, in the intervention in the implementation-process one should have to pay attention to all the subsystems proposed by Deal and Baldridge). Indeed, Deal and Rosaler draw our attention to the fact that, as to innovations in education, one has hitherto paid to much attention to the teacher as an individual ("the individual perspective") and too little to the school as organization ("the organizational perspective") (Deal & Rosaler, 1976, p. 6-7).

On the other hand, one can suppose that the problem of the desirableness is comprised in the problem of the extent to which an innovation is realizable. We mean that persons who are strongly convinced of the desirableness of an innovation will feel the constraints as less restraining. In other words, when one is convinced of the use and the necessity of an innovation one approaches its realization more easily because one works at it more enthusiastically and because the 'constraints' as it were are less restraining or felt as such.

Starting from the second supposition we decided after the dry-run that "conviction of use and necessity" would be inserted in the investigation about the extent to which an innovation is realizable. We ascertained that this factor, which reflects clearly the aspect desirableness, is considered as very important by both groups concerned and more by the inspectors than by the teachers. This proves that certainly the inspectors and also the teachers are of the opinion that the realization of an innovation is determined for the greater part by one's "conviction of use and necessity". This conviction corresponds practically to the acceptance of the value of the objectives that are at the basis of the innovation.

4. Discussion

The most important findings of this investigation can be summed up as follows : the inspectors, who in Belgium are the official change agents, and who in this function have to play the principal part in the implementation of the centrally proposed innovations, firstly pay less attention to all the possible constraints than is required by their task which consists in motivating the teachers for the innovation, and secondly, when they point out constraints it concerns constraints that are of a quite different kind than those that are considered as important by the teachers. This implies, that when determining priorities in teacher governance, decisions are taken about matters that are of minor interest to the practicians. Charters and Pellegrin come to the same ascertainment when in their summing up of "chronic problems of the change process" they point to "the fundamental but generally unacknowledged strain that exists between the ideology of teacher governance and the strategy of directed change" (Charters & Pellegrin, 1973, p. 12).

For the time being it is difficult to say which of both conceptions is the better one. Kritek however points out that insufficient equipment and bad material circumstances (cf. the constraints 4, 8, 11, 18 in table 4 with respectively the inspectors and the teachers) are factors that hinder an easy implementation (Kritek, 1976, p. 92-94). Further on he states that the attitude of many "administrators", who have but little contact with the daily practice in the class, is also a factor that can be restraining (Ibidem, p. 96).

From the results of the investigation described above, it appears also that the inspectors pay little attention to the problem of the realization. Consequently we can ask ourselves whether they consider giving concrete and continuous help as part of their task. Formulated in a more general way we would say for the present that in a political-administrative innovation strategy one must in the first place pay attention to the adoption and the dissemination of the innovation and less to its implementation. In the way the inspectors conceive their task we find as it were symptoms illustrating this top-down strategy.

The nature of the investigation and the way it was done have as an outcome that the results concern only an instantaneous photograph and have therefore a relative character. Indeed, one could imagine that the choice of motives and constraints will change - especially with the teachers - according as one works longer with an innovation. But on the other hand, the method here described can be used during the implementation-phase of for instance a new curriculum. When one asks regularly what is considered as motive or constraint by the concerned persons one can get information that gives an insight into the implementation process. The information thus gathered can be the basis for the decisions one has to take concerning the organization of intervention activities.

Notes

(1) This is a revised version of an earlier published article (R. Vandenberghe & C. Pottie, 1974-1975).

(2) An analogous analysis method was also used by Taylor and Maguire. These authors evaluated the curriculum planning of a curriculum of biology on the basis of the differential perception of the objectives of the teaching-learning-process by two groups of persons concerned either with bringing about the curriculum or with executing it.

(3) The notion that an innovation is "didactically wished for" indicates to what extent this innovation corresponds to certain general objectives of the primary school whereas the notion "realizable" indicates how far an innovation can be implemented in practice.

(4) The representativeness of the sample was tested by means of χ^2.

(5) The separate calculation of the frequences f_1, f_2 and f_3 enabled us also to carry out a weighing by multiplying them respectively by 3, 2 and 1. After additioning we got the sum of the weighed frequencies and on the basis of these sums we also drafted for each innovation two rank orders as starting-points for calculating a rank correlation. As this way of calculating has lead to the same conclusions we don't go into the subject within the scope of this article.

(6) We arrive at the percentages $100.P_I$ and $100.P_T$ by starting from the relative numbers P_I and P_T. The latter express the number of inspectors (I) and teachers (T) who point out a definite motive or a definite constraint with regard to 84 (the number of inspectors questioned) and 242 (the number of teachers questioned).

(7) The same method could not be used when examining the motivations : as certain motivations are more specifically connected with certain innovations, a mutual comparison made no sense.

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